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GERMAN

PATENT OFFICE

(21) Application No.: P 43 39 110.9
(22) Filed: November 16, 1993
(43) Date Opened to Inspection: May 18, 1995

DE 43 39 110 A1

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Non-disclosure requested

(54) Holding body for grinding tools

(57) According to the invention, a holding body for grinding tools is equipped with means of engagement shaped like T-hooks, which engage in adhering fashion in loop-shaped units of grinding tools, in particular, non-woven material grinding disks.

[see drawing]

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The following representations are taken from the documents filed by the applicant

Description

The invention pertains to a holding body for grinding tools according to the introductory clause of claim 1.

- 5 For grinding and polishing with machine tools and other manually operated machines, replaceable grinding tools are fastened on a holding body.

Very prevalent in that regard is the handling of grinding tools that are equipped with a loop covering according to the Velcro system, into which a covering of small hooks or mushroom heads of the holding body can engage.

- 10 In conjunction with that, non-woven grinding materials are special kinds of grinding tools because, as a result of the specific type of manufacture, they automatically form loops which, however, are relatively large-meshed and are sometimes surrounded by abrasive materials. In order to be able to use non-woven materials for grinding in combination with the Velcro system as well, they also had to be provided with an additional loop covering. Efforts to also hold non-woven materials for grinding by means of a very coarsely configured mushroom-head covering without an additional loop layer are known on the market, but these systems have the disadvantage that they use
15 round mushroom heads that easily slip out of the large-mesh loops of the grinding disks made of non-woven material, and lead to a letting loose of the tool at higher rpm.

The task of the invention is to create a holding body that is well-suited for holding grinding disks made of non-woven material, without the latter having to be additionally equipped with a loop covering.

- 20 According to the invention, this problem is solved by a holding body according to the introductory clause of claim 1 with its characterizing features.

- With the inventive solution, it is possible to couple a grinding disk made of non-woven material directly onto the support surface of the holding body. In this regard, the means of engagement shaped like T-hooks grip into the loops of the non-woven grinding material and reliably hold it during the grinding operation. Their retention force thereby is greater than the centrifugal force acting radially, but they can be removed by means of shearing force in the axial
25 direction just as easily as the Velcro system.

Additional features and advantages of the invention can be found in the claims and in the description below in which embodiments of the invention's object are explained in more detail with the aid of a drawing.

The following are shown in the drawing:

- 30 **Fig. 1** View of a first form of implementation of the holding body, with a detail of an enlarged representation of the means of engagement that are shaped like T-hooks.

Fig. 2 Cross section through another form of implementation of the holding body with a covering transection.

Fig. 3 Cross section of another form of implementation of the holding body with a covering cutout.

- First, designated by 1 in **Fig. 1** is a holding body that is designed essentially rotationally symmetrical around a center line 8. It is understood that the holding body can also have a different geometric configuration, e.g., it can be
35 made with an approximately rectangular, square, triangular, polygonal or other such geometric shape. In this embodiment, attachment towards the machine tool takes place by means of a screw thread 2, but it can also be implemented by means of a pin-like connection for seating in a clamping chuck.

- The bottom support surface 3 bears the covering 4 with the means of engagement 5 shaped like T-hooks. In the embodiment, a flexible base layer, e.g., made of foamed material or soft elastomer, is placed in between. The enlarged detail shows one possible form of implementation of the T-bar 6 of the means of engagement 5 shaped like
40 T-hooks.

- Illustrated in **Fig. 2** is another form of implementation of a holding body, which, with a design similar to that of **Fig. 1**, reflects the components that were already designated there. However, the covering 4 exhibits at least one transection 9, which allows the base layer 7 lying under the covering 4 to make better use of its flexibility, which is
45 advantageous when performing internal grinding of curved shapes, for example.

- Another form of implementation of a holding body can be seen in **Fig. 3**, in this case having a seating bore 11 for flange-mounting the holding body 1 to a machine tool, and having a bottom covering 4 that provides a cutout 10 towards the border of the support surface 3 or the base layer 7. In this version, the grinding disk made of non-woven material is supported directly on the support surface 3 or the base layer 7, which also allows greater flexibility in the
50 edge region.

Patent Claims

1. Holding body for grinding tools, in particular, grinding disks made of non-woven material, having on the top a screw or clamp connection for seating into or flanging onto a machine tool and a bottom support surface with a covering for the self-adhering fastening of a grinding tool, **characterized in that** the covering (4) is formed in one piece and is provided with means of engagement (5) shaped like T-hooks.

2. Holding body according to claim 1, characterized in that the T-hooks (5) are arranged uniformly on the covering and that the distance of the individual hooks from one another is approximately 2 mm to 10 mm.
3. Holding body according to claims 1 and 2, characterized in that the T-bar (6) of the engaging means (5) shaped like T-hooks projects approximately 0.5 mm to 10 mm from the covering plate (4).
4. Holding body according to claim 1, characterized in that a flexible base layer (7) is arranged between the support surface (3) and the covering (4).
5. Holding body according to claim 4, characterized in that the covering (4) in an edge width of approximately 5–40 mm is transected at least once (9).
6. Holding body according to claim 1–5, characterized in that the covering (4) at the edge of the support surface (3) is cut out (10) in a width of 3 to 40 mm.

In addition, 2 page(s) of drawings.

Number: DE 43 39 110 A1
Int. Cl.⁶: B 24 D 9/08
Date Opened to Inspection: May 18, 1995

[see drawing]

Fig. 1

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[see drawing]

Fig. 2

[see drawing]

Fig. 3